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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/819,022  | 03/26/2001  | Jukka-Pekka Iivonen  | 796.384USW1         | 2253             |
| 32294   | 7590        | 09/24/2004           | EXAMINER            |                  |
| SQUIRE, SANDERS & DEMPSEY L.L.P.<br>14TH FLOOR<br>8000 TOWERS CRESCENT<br>TYSONS CORNER, VA 22182 |             |                      | NGUYEN, MERILYN P   |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2171                |                  |
| DATE MAILED: 09/24/2004   |             |                      |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                  |                |
|------------------------------|------------------|----------------|
| <b>Office Action Summary</b> | Application No.  | Applicant(s)   |
|                              | 09/819,022       | IIVONEN ET AL. |
|                              | Examiner         | Art Unit       |
|                              | Marilyn P Nguyen | 2171           |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-26 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 26 March 2001 is/are: a) accepted or b) objected to by the Examiner.                            Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).                            Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

|  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____.   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>09/2004</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input checked="" type="checkbox"/> Other: <u>Detailed Action</u> .      |

***DETAILED ACTION***

1. This application claims foreign priority Application No. 982095 filed on September 29, 1998.
2. This application is a continuation of PCT/FI99/00717 International Filed September 02, 1999.
3. Claims 1-26 are pending in this office action.

***Acknowledges***

4. Receipt is acknowledged of the following items:
  - o Information Disclosure Statement (IDS) filed on 03/26/2001 and made of record.

The references cited on the PTOL 1449 form have been considered.

The applicant Preliminary amendment has been considered and made of record as dated March 26, 2001.

***Claim Objections***

5. Claims 1, 6, 12, 23, 25, and 26 are objected to because of the following informalities:

The format of claims 1, 12, 23, and 25 is improper. The claims have no clear separation of elements/limitations. It is difficult to determine distinct boundaries between precise claim limitations in the claim (i.e. the preamble and the body of the claim). The Examiner suggests inserting a semicolon and/or colon for better form and clarity. See *Festo Corp. V. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 56 USPQ2d 1865 (Fed.Cir.2000).

Claim 6, line 1, "claim 1" is suggested to --claim 4--.

Claim 26, line 1, “claim 23” is suggested to --claim 25--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 12, these claims are being incomplete for omitting essential cooperative relationships of steps illustrating the method for implementing a functional memory. For example, it's unclear how “the memory” (line 4) and “address computation” (line 14) are cooperated with method for implementing a functional memory. Because the claim is a method claim, all the limitations in the claim need to support the method.

Regarding claims 1 (line 6), 12 (line 6), 23 (line 5), and 25 (line 5), the word "can be" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). For example, it's unclear whether the “individual node”, specifically, is a trie node, a bucket, or something else.

Regarding claims 1, 12, 23, and 25, it's unclear which limitation in the claim is “characterized”. For example, it's unclear whether “implementing trie nodes as quad nodes” (line 29) characterized “the memory”, “the address computation”, the method for implementing a functional memory, or other limitation.

Regarding claims 23 and 25, there is insufficient antecedent basis for “progress” (line 2) and “each case” (line 3) in the claim. It’s unclear which progress is made and what “case” is employed.

***Allowable subject matter***

7. Claim 1-26 would be allowable if rewritten or amended to overcome the objection(s) and rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to disclose or suggest the claimed (Claims 1, 12, 23, and 25) limitations of (in combination with all other features in the claim), implementing a functional memory, in which memory data is stored as data units for each of which dedicated storage space is assigned in the memory, in which memory is implemented as a directory structure comprising a tree-shaped hierarchy having nodes at several different levels, wherein an individual node is a trie node associated with a logical table and by implementing trie nodes as quad nodes of four elements, and replacing in at least part of the directory structure groups of successive nodes by compressed nodes in such a way that an individual group comprising a given quad node and its child nodes is replaced by a node whose logical table has 16 elements, and a compressed node known per se is formed from said node of 16 elements by physically storing in the node only non-nil pointers and in addition a bit pattern on the basis of which the physical storage location in the node, corresponding to the search word, can be determined, in conjunction with the remaining, salient claim provisions.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bugajski U.S Patent No. 5,592,667 discloses method of storing compressed data for accelerated interrogaration.

Doeringer U.S Patent No. 5,787,430 discloses variable length data sequence backtracking a trie structure.

Au U.S Patent No. 5,829,004 discloses device for storage and retrieval of compact contiguous tree index records.

Soheili-Arasi U.S Patent No. 5,684,976 discloses method for reduced address tags storage within a directory having a tree-like structure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Merilyn P Nguyen whose telephone number is 571-272-5177. The examiner can normally be reached on M-F: 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-746-7240 for After Final communications.

Art Unit: 2171

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

*Mn*

MN

September 17, 2004



SAFET METJAHIC  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100